

(115824C)

Reference 5 (translation of claims):

JP Patent Application Disclosure No. 63-054485 - March 8, 1988

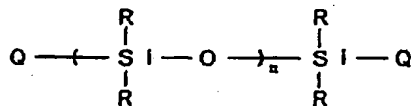
Application No. 61-198381 - August 25, 1986

Applicant: Toray Silicone K.K., Tokyo, JP

Title: Fluidity-improving agent for powder

Claims:

1. Fluidity-improving agent for powder, which is a fine silica powder hydrophobized by a diorganosiloxane oligomer of the formula:



(wherein R is a monovalent hydrocarbon group; n is an integer between 1 and 15; Q is halogen atom, hydroxyl group, or -OR<sup>1</sup>; and R<sup>1</sup> is a monovalent hydrocarbon group),

and which has a BET-method specific surface area of  $180 \pm 100 \text{ m}^2/\text{g}$ , a carbon content of  $5 \pm 3\%$  by weight, an apparent density of  $75 \pm 35 \text{ g/l}$ , compression density of  $200 \pm 35 \text{ mg/cm}^2$  when 1.5g of a sample is placed under a pressure of  $3.4 \text{ kg/cm}^2$  for 4 minutes, and a silanol titer of  $1.0 \pm 1.0 \text{ ml}$

(wherein the silanol titer is expressed by a titer of an aqueous solution of 0.1N-sodium hydroxide required for changing the pH of a dispersion from 4.0 to 9.0, where the dispersion is

obtained by dispersing 2.0g of a sample in a liquid mixture of 25ml of ethanol and 75ml of 20% by weight aqueous solution of NaCl).

2. Fluidity-improving agent according to Claim 1, wherein the fine silica powder is a fumed silica.

## FLUIDITY IMPROVER FOR POWDER

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### Abstract

**PURPOSE:** To provide a fluidity improver which allows the fluidity of powder to be greatly improved and retained over a long period of time, consisting of fine silica powder made hydrophobic with a specified diorganosiloxane oligomer.

**CONSTITUTION:** 1-50pts.wt. diorganosiloxane oligomer of the formula (wherein R is a monovalent hydrocarbon group; n is 1-15; Q is halogen, hydroxyl or OR<1>; and R<1> is a monovalent hydrocarbon group) is added to 100pts.wt. fine silica powder having a very low water content (e.g., fumed silica). The mixture is mixed until a homogeneous mixture is formed. The mixture is heated at 100-200 deg.C to make the powder hydrophobic, thus obtaining a fluidity improver having such characteristics that its specific surface area (BET method) is 180+ or -100m<2>; its carbon content is 5+ or -3wt%; its apparent density is 75+ or -35g/l; its compression density is 220+ or -35mg/cm<2> when 1.5g of a sample is placed under a pressure of 3.4kg/cm<2> for 4min; and its silanol titer is 1.0+ or -1.0ml; the titer being expressed by the titer of an aq. soln. of 0.1N-NaOH required for changing the pH of a dispersion from 4.0-9.0. The dispersion obtd. by dispersing 2.0g of a sample in a liquid mixture of 25ml of ethanol and 75ml of a 20wt% aq. soln. of NaCl. 0.2-0.3wt% said fluidity improver is added to powder.

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